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Reviewer: Anne Corrigan

Timestamp: [year=2008; month=8; day=29; hr=11; min=59; sec=49; ms=434; ]

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Application No: 10591852

Version No: 1.0

Input Set:

Output Set:

Started: 2008-07-24 18:50:29.358

Finished: 2008-07-24 18:50:32.402

Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 44 ms

Total Warnings: 146

Total Errors: 0

No. of SeqIDs Defined: 205

Actual SeqID Count: 205

Error code	Error Description
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**Input Set:**

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Error code

Error Description

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<110> Weyler, Walter  
Hsu, Amy Kuang-Hua

<120> pckA Modifications and Enhanced Protein Expression in Bacillus

<130> GC836-US

<140> 10591852

<141> 2008-07-24

<150> PCT/US2005/011821

<151> 2005-04-07

<150> US 60/561,110

<151> 2004-04-09

<160> 205

<170> PatentIn version 3.2

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<211> 129

<212> DNA

<213> Bacillus subtilis

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<211> 43

<212> PRT

<213> Bacillus subtilis

<400> 2

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<212> DNA

<213> Bacillus subtilis

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aatccgtccg	ttcaattttt	aaaaaaagtt	tctgccacac	tggaaagttga	attaacagaa	180
ttatttgacg	cagaaacaat	gatgtatgaa	aaaatcagcg	gcggtgaaga	agaatggcgc	240
gtacatttag	tgcaagccgt	acaagccggg	atggaaaagg	aagaattggt	cacttttacg	300

aacagactca	agaaagaaca	gcctgaaact	gcctcttacc	gcaaccgcaa	actgacggaa	360
tccaatatag	aagaatggaa	agcgctgatg	gcggaggcaa	gagaaatcgg	cttgtctgtc	420
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 <213> Bacillus subtilis

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 20 25 30  
 Lys Ile Glu Arg Gly Val His Thr Asn Pro Ser Val Gln Phe Leu Lys  
 35 40 45  
 Lys Val Ser Ala Thr Leu Glu Val Glu Leu Thr Glu Leu Phe Asp Ala  
 50 55 60  
 Glu Thr Met Met Tyr Glu Lys Ile Ser Gly Gly Glu Glu Glu Trp Arg  
 65 70 75 80  
 Val His Leu Val Gln Ala Val Gln Ala Gly Met Glu Lys Glu Glu Leu  
 85 90 95  
 Phe Thr Phe Thr Asn Arg Leu Lys Lys Glu Gln Pro Glu Thr Ala Ser  
 100 105 110  
 Tyr Arg Asn Arg Lys Leu Thr Glu Ser Asn Ile Glu Glu Trp Lys Ala  
 115 120 125  
 Leu Met Ala Glu Ala Arg Glu Ile Gly Leu Ser Val His Glu Val Lys  
 130 135 140  
 Ser Phe Leu Lys Thr Lys Gly Arg  
 145 150

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 <212> DNA  
 <213> Bacillus subtilis

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 <212> PRT  
 <213> Bacillus subtilis

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 35 40 45  
 His Pro Ala Met Arg Ala Ile  
 50 55

<210> 7

<211> 831  
 <212> DNA  
 <213> Bacillus subtilis

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 ttcaccatgt tttttaccct gatgatgagc gaaacggttt ttgcggcggg actgaataaa 120  
 gatcaaaaagc gccggggcga acagctgaca agtatctttg aaaacggcac aacgggagatc 180  
 caatatggat atgtagagcg attggatgac gggcgaggct atacatgcgg acgggcaggc 240  
 tttacaacgg ctaccgggga tgcattggaa gtagtggaaag tatacacaaa ggcagttccg 300  
 aataacaaaac tgaaaaagta tctgcctgaa ttgcgcgctc tggccaagga agaaagcgat 360  
 gatacaagca atctcaaggg attcgttctt gcctggaagt cgcttgcaaa tgataaggaa 420  
 tttcgcgccg ctcaagacaa agtaaattgac catttgattt atcagcctgc catgaaacga 480  
 tcggataatg cgggactaaa aacagcattg gcaagagctg tgatgtacga tacggttatt 540  
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 gacgtacgct atgacgatct gatgaatccg gccaatcatg acaccctga cgaatggaga 720  
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 <211> 277  
 <212> PRT  
 <213> Bacillus subtilis

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 Val Phe Ala Ala Gly Leu Asn Lys Asp Gln Lys Arg Arg Ala Glu Gln  
 35 40 45  
 Leu Thr Ser Ile Phe Glu Asn Gly Thr Thr Glu Ile Gln Tyr Gly Tyr  
 50 55 60  
 Val Glu Arg Leu Asp Asp Gly Arg Gly Tyr Thr Cys Gly Arg Ala Gly  
 65 70 75 80  
 Phe Thr Thr Ala Thr Gly Asp Ala Leu Glu Val Val Glu Val Tyr Thr  
 85 90 95  
 Lys Ala Val Pro Asn Asn Lys Leu Lys Lys Tyr Leu Pro Glu Leu Arg  
 100 105 110  
 Arg Leu Ala Lys Glu Glu Ser Asp Asp Thr Ser Asn Leu Lys Gly Phe  
 115 120 125  
 Ala Ser Ala Trp Lys Ser Leu Ala Asn Asp Lys Glu Phe Arg Ala Ala  
 130 135 140  
 Gln Asp Lys Val Asn Asp His Leu Tyr Tyr Gln Pro Ala Met Lys Arg  
 145 150 155 160  
 Ser Asp Asn Ala Gly Leu Lys Thr Ala Leu Ala Arg Ala Val Met Tyr  
 165 170 175  
 Asp Thr Val Ile Gln His Gly Asp Gly Asp Asp Pro Asp Ser Phe Tyr  
 180 185 190  
 Ala Leu Ile Lys Arg Thr Asn Lys Lys Ala Gly Gly Ser Pro Lys Asp  
 195 200 205  
 Gly Ile Asp Glu Lys Lys Trp Leu Asn Lys Phe Leu Asp Val Arg Tyr  
 210 215 220  
 Asp Asp Leu Met Asn Pro Ala Asn His Asp Thr Arg Asp Glu Trp Arg  
 225 230 235 240  
 Glu Ser Val Ala Arg Val Asp Val Leu Arg Ser Ile Ala Lys Glu Asn

	245		250		255
Asn Tyr Asn Leu Asn Gly Pro Ile His Val Arg Ser Asn Glu Tyr Gly					
	260		265		270
Asn Phe Val Ile Lys					
	275				

<210> 9  
 <211> 792  
 <212> DNA  
 <213> Bacillus subtilis

<400> 9

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acaaatctgg ttgacatgct tgcgaaaaaa tactcaaaag gcaaaagctt ccacgaggat	180
ctccgccagg tcggcatgat cgggctgcta ggcgcgatta agcgatacga tctgttgtc	240
ggcaaatcgt ttgaagcttt tgcaatcccg acaatcatcg gtgaaattaa acgtttcctc	300
agagataaaa catggagcgt tcatgtgccg agacgaatta aagaactcgg tccaagaatc	360
aaaatggcgg ttgatcagct gaccactgaa acacaaagat cgccgaaagt cgaagagatt	420
gccgaattcc tcgatgtttc tgaagaagag gttcttgaaa cgatggaaat gggcaaaagc	480
tatcaagcct tatccgttga ccacagcatt gaagcggatt cggacggaag cactgtcacg	540
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ctgcaaagcg tgcttcatgt cctttcagac cgtgagaaac aaatcataga ccttacgtat	660
attcaaaaca aaagccaaaa agaaactggg gacattctcg gtatatctca aatgcacgtc	720
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 <212> PRT  
 <213> Bacillus subtilis

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35 40 45	
Lys Lys Tyr Ser Lys Gly Lys Ser Phe His Glu Asp Leu Arg Gln Val	
50 55 60	
Gly Met Ile Gly Leu Leu Gly Ala Ile Lys Arg Tyr Asp Pro Val Val	
65 70 75 80	
Gly Lys Ser Phe Glu Ala Phe Ala Ile Pro Thr Ile Ile Gly Glu Ile	
85 90 95	
Lys Arg Phe Leu Arg Asp Lys Thr Trp Ser Val His Val Pro Arg Arg	
100 105 110	
Ile Lys Glu Leu Gly Pro Arg Ile Lys Met Ala Val Asp Gln Leu Thr	
115 120 125	
Thr Glu Thr Gln Arg Ser Pro Lys Val Glu Glu Ile Ala Glu Phe Leu	
130 135 140	
Asp Val Ser Glu Glu Glu Val Leu Glu Thr Met Glu Met Gly Lys Ser	
145 150 155 160	
Tyr Gln Ala Leu Ser Val Asp His Ser Ile Glu Ala Asp Ser Asp Gly	
165 170 175	
Ser Thr Val Thr Ile Leu Asp Ile Val Gly Ser Gln Glu Asp Gly Tyr	
180 185 190	

Glu	Arg	Val	Asn	Gln	Gln	Leu	Met	Leu	Gln	Ser	Val	Leu	His	Val	Leu
195				200				205							
Ser	Asp	Arg	Glu	Lys	Gln	Ile	Ile	Asp	Leu	Thr	Tyr	Ile	Gln	Asn	Lys
210				215				220							
Ser	Gln	Lys	Glu	Thr	Gly	Asp	Ile	Leu	Gly	Ile	Ser	Gln	Met	His	Val
225				230				235				240			
Ser	Arg	Leu	Gln	Arg	Lys	Ala	Val	Lys	Lys	Leu	Arg	Glu	Ala	Leu	Ile
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<210> 11  
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 <212> DNA  
 <213> Bacillus subtilis

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tttaccact	gggaacggta	tctcattgtc	gcagtcagtt	ttgctttgat	tgatgctttt	240
atcttcttaa	gtgcatatgt	caaaaaactg	gccggcagcg	agcttgaaac	agacacaaga	300
gaaattcttg	aagaaaacaa	cgaaatgctc	cacatgtatc	tcaatcgget	gaaaacatac	360
caatacctat	tgaaaaacga	accgatccat	gtttattatg	gaagtataga	tgcttatgct	420
gaaggatttg	ataagctgct	gaaaacctat	gctgataaaa	tgaacttaac	ggcttctctt	480
tgccactatt	cgacacaggc	tgataaagac	cggttaaccg	agcatatgga	tgatccggca	540
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ctcatccctt	ttaccatcga	gacacagaac	tatgtcatca	agctgacgtc	tgacagcatt	660
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ccaattgagg	aggaaggtga	agga				744

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 <213> Bacillus subtilis

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20		25		30											
Lys	Met	Ser	Ala	Ile	Arg	Lys	Thr	Trp	Tyr	Leu	Leu	Phe	Val	Leu	Gly
35		40		45											
Ala	Met	Val	Tyr	Trp	Thr	Tyr	Glu	Pro	Thr	Ser	Leu	Phe	Thr	His	Trp
50		55		60											
Glu	Arg	Tyr	Leu	Ile	Val	Ala	Val	Ser	Phe	Ala	Leu	Ile	Asp	Ala	Phe
65		70		75		80									
Ile	Phe	Leu	Ser	Ala	Tyr	Val	Lys	Lys	Leu	Ala	Gly	Ser	Glu	Leu	Glu
85		90		95											
Thr	Asp	Thr	Arg	Glu	Ile	Leu	Glu	Glu	Asn	Asn	Glu	Met	Leu	His	Met
100		105		110											
Tyr	Leu	Asn	Arg	Leu	Lys	Thr	Tyr	Gln	Tyr	Leu	Leu	Lys	Asn	Glu	Pro
115		120		125											
Ile	His	Val	Tyr	Tyr	Gly	Ser	Ile	Asp	Ala	Tyr	Ala	Glu	Gly	Ile	Asp
130		135		140											
Lys	Leu	Leu	Lys	Thr	Tyr	Ala	Asp	Lys	Met	Asn	Leu	Thr	Ala	Ser	Leu
145		150		155		160									



Cys His Tyr Ser Thr Gln Ala Asp Lys Asp Arg Leu Thr Glu His Met  
 165 170 175  
 Asp Asp Pro Ala Asp Val Gln Thr Arg Leu Asp Arg Lys Asp Val Tyr  
 180 185 190  
 Tyr Asp Gln Tyr Gly Lys Val Val Leu Ile Pro Phe Thr Ile Glu Thr  
 195 200 205  
 Gln Asn Tyr Val Ile Lys Leu Thr Ser Asp Ser Ile Val Thr Glu Phe  
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 Asp Tyr Leu Leu Phe Thr Ser Leu Thr Ser Ile Tyr Asp Leu Val Leu  
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 <212> DNA  
 <213> *Bacillus subtilis*

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 <212> PRT  
 <213> *Bacillus subtilis*

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 His Val Thr Glu Arg Gly Met Thr  
 35 40

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 gaaattgagg atatggaaga agaccaagat ttgctgctgt attattcttt aatggagttc 180  
 aggcaccgtg tcatgctgga ttacattaag ctttttgagg aggacacgtc gcagctagag 240  
 ttttcagaat tgtagaaga catcgaaggg aatcagtaca agctgacagg gcttctcgaa 300  
 tattacttta atttttttcg aggaatgtat gaatttaagc agaagatgtt tgtcagtgcc 360  
 atgatgtatt ataaacgggc agaaaagaat cttgccctcg tctcggatga tattgagaaa 420  
 gcagagtttg cttttaaaat ggctgagatt ttttacaatt taaaacaaac ctatgtttcg 480  
 atgagctacg ccgttcaggc attagaaaca taccaaatgt atgaaacgta caccgtccgc 540  
 agaatccaat gtgaattcgt tattgcagggt aattatgatg atatgcagta tccagaaaga 600  
 gcattgcccc acttagaact ggcttttagat cttgcaaaga aagaaggcaa tccccgcctg 660  
 atcagttctg ccctatataa tctcggaaac tgctatgaga aaatgggtga actgcaaaag 720  
 gcagccgaat actttgggaa atctgtttct atttgcaagt cggaaggtt cgataatctt 780  
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 caaaaaaagt atcgtgaagg attggaaatc gcccgtaaat acagtgatga attatttgtg 900  
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